Docket No.

REMARKS

The Examiner is thanked for his very thorough Office action. Claims 1 and 17-42 are currently pending in the present application. Claims 23-42 are cancelled, without prejudice, and Applicants respectfully reserve the right to reintroduce these claims at a later time. All other claim rejections are hereby respectfully traversed.

I. Double Patenting Rejection: 1, 23, 24, 33, 42 over claims 11-12 of USPN 6243099

Claim 1 is reproduced for purposes of discussion.

> 1. A method of modeling of the visible world using full-surround image data, said method comprising:
>
> selecting a view point within a p-surface;
>
> selecting a direction of view within the p-surface;
>
> texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-surface; and
>
> displaying a predetermined portion of said texture mapped p-surface.

It is respectfully submitted that claim 1 of the present application differs from the cited claims 11 and 12 of the 099 in at least the following way: Claim 1 of the current application selects a "direction of view," and this limitation is not shown in the cited claims of the 099. This has the effect that the resulting generated surface of the present application's claims is not necessarily a sphere--it is a surface, and this surface's exact parameters would depend on the selected direction of view, and possibly on other parameters (for example, the claims of the 099 would not include generating a texture mapped p-cylinder, or other surface that is not spherical). Claim 11 of the 099 does not select a

direction of view within the p-surface, and it generates a texture mapped "p-sphere", not a texture mapped "p-surface", as currently claimed.

Examiner also states, with respect to claim 1, that claim 12 of the 099 explicitly states, "rotating the direction of view in the opposite direction." Examiner says that this necessarily means that claim 12 discloses selecting a direction of view.

Applicant respectfully disagrees, in that the limitations of the combined claims 11 and 12 of the 099 still are patentably distinct from claim 1 of the present application. For example, claims 11 or claims 11 and 12 still claim generating a texture mapped p-sphere, and that p-sphere is a different entity than the p-surface of the present application. Texture mapping a p-sphere includes the full solid angle in three dimensions, while a p-surface of the present application does not require that the full spherical surface be texture mapped.

Further, because the 099 claims a p-sphere, the geometric parameters of the surface are determined--spherical. However, a p-surface may not necessarily be spherical, it could be some other shape, as shown below. This difference of scope in the claims means that at least claim 1 of the present application is patentably distinct from the claims of the 099.

It is also respectfully noted that the present application describes the difference between a p-sphere and a p-surface, for example, at page 12, which states in part:

> P-SURFACE: a computer graphics representation of any surface with a well-defined inside and outside.... The union of all such points x form the region X of the p-surface. For a convex p-surface, the region X is all points of the interior of the p-surface. Examples of computer graphics objects which may be modeled as p-surfaces: tetrahedron, cube, sphere, ellipsoid, cylinder, apple torus, lemon torus, b-spline surfaces closed or periodic in u and v. A p-sphere is a p-surface.

It is noted, however, that not all p-surfaces are p-spheres, as described in the specification and the cited paragraph. Hence, the scope of claims

describing a p-sphere is distinct from the scope of a claim describing a p-surface.

These arguments, presented in favor of claim 1, are also believed to alleviate the double patenting rejection of claims 23-24, 33, and 42, as all these claims are distinguished by referencing a p-surface, rather than a p-sphere.

II. 35 USC 112 first paragraph rejection of claims 17-22, 25-32, and 34-41

With respect to claims 17-21, Examiner states that "the specification does not disclose the p-surface is comprised of one or more polygons."

Applicant respectfully submits that the claims themselves are part of the specification. It is noted that the Examiner specifically states that the rejected claims fail to comply "with the written description requirement," as distinct from the enablement requirement or the best mode requirement (see MPEP 2161). It is also noted that Examiner has not provided, in the rejection, a statement as to why the applicant would not have had possession of the invention at the time of filing.

As such, it is respectfully submitted that, because the claims themselves are included in the written description, and because the claim language has plain meaning that would be understood by one of ordinary skill in the art, the claims do satisfy the written description requirement.

It is noted that the MPEP states, at 2161.01:

> The function of the written description requirement is to ensure that the inventor had possession of, as of the filing date of the application relied on, the specific subject matter later claimed by him or her; how the specification accomplishes this is not material. *In re Herschler*, 591 F.2d 693, 700-01, 200 USPQ 711, 717 (CCPA 1979) and further reiterated in *In re Kaslow*, 707 F.2d 1366, 707 F.2d 1366, 217 USPQ 1089 (Fed. Cir. 1983).

[Emphasis added.] Hence, the specification may use the claims to satisfy the written description requirement.

Further, the subject matter of the rejected claims is supported in the specification. For example, with respect to at least claim 17, 3D graphics capability (p. 4, para 0009) is known to use polygons to represent surfaces of many types. Polygons are well known in the 3D graphics art. Texture mapping is also mentioned throughout the application, and this too is a well known part of 3D computer graphics.

Further, at paragraph 0033 of the present application it is stated:

> It should be mentioned that when the user selects a viewpoint at the center of this sphere and renders the view using the primitives of a conventional 3D graphics system, ...

This statement describes using "primitives" in a conventional 3D graphics system. Primitives is a known term that refers to polygons (among other things) in a conventional 3D computer graphics system. One of ordinary skill in the art, reading that term in the context of the present claims and specification, would apprehend the meaning and scope of the invention, and would also understand that the inventor of the present application had possession of the claimed invention.

With respect to claim 22, the subject matter is supported in USPN 5903782, which is incorporated by reference at page 16 of the present specification. That patent teaches a camera to capture images using wide angle camera systems.

III. Art Rejections

Examiner has rejected claims 1, 23, 24, 33, and 42 over USPN 6028584. Claim 1 is reproduce for purposes of discussion.

> 1. A method of modeling of the visible world using full-surround image data, said method comprising:

selecting a view point within a p-surface;

selecting a direction of view within the p-surface;

texture mapping full-surround image data onto said p-surface such that the resultant texture map is substantially equivalent to projecting full-surround image data onto the p-surface from said view point to thereby generate a texture mapped p-surface; and

displaying a predetermined portion of said texture mapped p-surface.

It is respectfully submitted that Chiang does not depict full surround image data, but rather only teaches panoramic image data. The term "full-surround image data" is defined in the current specification at page 11, and the definition states that a full-surround image enables the construction of an independent viewing system, as defined in the specification.

An example of full surround image data includes, but is not limited to, a sphere, a cube, and other shapes. However, the cited figure of Chiang appears to be a panoramic view that does not equate to full surround image data. Specifically, the top and bottom of Chiang's image at Figure 2 show gaps in the data. Because of these gaps in the data, the image of Chiang cannot construct an independent viewing system, as is required by "full-surround" data. (It is noted that Independent Viewing System is also defined in the specification, and includes allowing a view to "pan that image data in all directions with the effect that each viewer feels like they are "inside" of that imagery....")

Hence, Chiang does not teach or suggest the claimed limitations of, "a method of modeling the visible world using full-surround image data," or, "texture mapping full-surround image data onto said p-surface," as claimed in at least claim 1.

This distinction is significant because without teaching full-surround image data, Chiang cannot create an immersive environment, where a view is free to "look" in any direction.

Hence, it is respectfully submitted that at least claim 1 is distinguished from the cited reference. Favorable reconsideration is respectfully requested.

Further, those claims which depend from claim 1 are also believed allowable. Therefore, all pending claims are now believed in condition for allowance.

Conclusion

Thus, all grounds of rejection and/or objection are traversed or accommodated, and favorable reconsideration and allowance are respectfully requested. The Examiner is requested to telephone the undersigned attorney or Robert Groover for an interview to resolve any remaining issues.

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Respectfully submitted,

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